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AMSAT NEWS SERVICE
ANS-261

ANS is a free, weekly, news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

Please send any amateur satellite news or reports to:
ans-editor@amsat.org

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SB SAT @ AMSAT $ANS-261.01
AMSAT BoD, Annual Meeting, and Eagle Satellite Team Meeting

AMSAT News Service Bulletin 261.01
From AMSAT HQ SILVER SPRING, MD.
September 18, 2005
To All RADIO AMATEURS
BID: $ANS-261.01

Rick Hambly, W2GPS, AMSAT-NA President, reminds all members that the 2005 AMSAT Board of Directors Meeting will be held on Thursday, October 6th and ending at noon on Friday, October 7th. The AMSAT Annual Meeting will follow later on Friday. An Eagle satellite design team meeting will follow on Friday afternoon through Sunday morning, October 7th through the 9th. These are open meetings and all AMSAT members and guests are invited to attend. We are staying at the Wyndham Pittsburgh Airport Hotel located near the Pittsburgh International Airport. The phone number of the hotel is 412-788-8800.

[ANS thanks Rick, W2GPS for the above information]

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SB SAT @ AMSAT $ANS-261.02
2005 AMSAT Board of Directors Election Results

AMSAT News Service Bulletin 261.02
From AMSAT HQ SILVER SPRING, MD.
September 18, 2005
To All RADIO AMATEURS

BID: $ANS-261.02

As a result of the 2005 AMSAT Board of Directors elections, Rick W2GPS, Emily W0EEC, Gunther W8GSM, and Barry WD4ASW will serve on the Board for two years. The first alternate is Bob N4HY and the second alternate is Lee KU4OS. The results of the voting are (829 votes were cast):

Richard M Hambly, W2GPS - 575
Emily Clarke, W0EEC - 483
Gunther Meisse, W8GSM - 466
Barry Baines, WD4ASW - 458
Bob McGwier, N4HY - 399
Lee McLamb, KU4OS - 380
Bruce Paige, KK5DO - 302
Greg Wycoff, N0ZHE - 131

Submitted by Martha Saragovitz
AMSAT Manager

[ANS thanks Martha for the above information]

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SB SAT @ AMSAT $ANS-261.03
Hotel Survey for 2006 AMSAT Symposium

AMSAT News Service Bulletin 261.03
From AMSAT HQ SILVER SPRING, MD.
September 18, 2005
To All RADIO AMATEURS
BID: $ANS-261.03

The 2006 Symposium planning committee would like to welcome AMSAT and ARISS to San Francisco. We invite everyone to participate in a survey about hotels and hotel services. The Bay Area has so much to offer we will be faced with a number of decisions between hotels, and what better way to make a decision than to give added weight to the preferences of the attendees.

The survey is located at:
http://www.amsat.org/amsat-new/symposium/survey.php

We want to lock in hotel rates early to get the best rates and we also want to give adequate time for people who have to cash in tickets they booked for Lafayette. So the survey will end on October 1. We hope to announce the hotel a few weeks later. So please express your opinions early before the survey ends.

In the future we will also have surveys about events, tours, spouse tours and things for kids, so please visit the Symposium part of the AMSAT website often.

Your opinions matter, and more importantly we want to make you welcome here in the bay area.

[ANS thanks Emily, W0EEC, and Project OSCAR, hosts of the 2006 AMSAT Symposium in the San Francisco Bay area for the above information]

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SB SAT @ AMSAT $ANS-261.04
SuitSat Hardware On-Orbit/SSTV Equipment Aboard ISS

AMSAT News Service Bulletin 261.04
From AMSAT HQ SILVER SPRING, MD.
September 18, 2005
To All RADIO AMATEURS
BID: $ANS-261.04

Frank H. Bauer, KA3HDO, who is the ARISS International Chairman, AMSAT V.P. for Human Spaceflight Programs, and NASA ARISS Program Manager, provided an update on the status of the SuitSat and the SSTV gear for the ISS this week.

On Thursday September 8 at 13:08 UTC, Progress 19P lifted off from the Baikonur Cosmodrome in Kazakhstan. Included in the 2.5 tons of fuel, food and supplies are two Amateur Radio on the International Space Station (ARISS) systems---the Suitsat amateur radio hardware and the Slow Scan Television (SSTV) hardware and software. The successful docking of Progress to ISS on September 10 culminates the successful design, development, certification and delivery of these two ARISS Projects. The ISS Expedition 11 crew will unpack this equipment, making it available for installation, use and deployment by the Expedition 12 crew.

The Suitsat amateur radio system, coupled with a school artwork project, is planned to be installed in an outdated Russian Orlon spacesuit. It will then be deployed from the ISS during an Extra Vehicular Activity (EVA, or spacewalk). This is expected to occur in the December timeframe by the Expedition 12 crew. The Suitsat amateur radio system will beam down special messages and an SSTV image from within the Orlon space suit as it floats in space. Suitsat radio system will allow hams and students to track the suit and decode special international messages, space suit telemetry, and a pre-programmed Slow Scan TV image through its specially built digital voice messaging system and amateur radio transmitter. As built, Suitsat will be a transmit-only capability that will run on the space suit's battery power.

As part of the Suitsat project, a CD with hundreds of school pictures, artwork, poems, and student signatures is included. Two identical CDs were flown, one will go in the suit and the other will be for the crew to review. Using the crew CD, we hope to downlink these images using the SSTV system that will be located inside the Service Module once it is operational. There are approximately 300 items on the CD. These are from all over the world (Japan/Asia, Europe, Russia, Canada, US, South America and Africa). Several NASA Explorer Schools participated as well as numerous ESA and Russian Space Agency-sponsored schools.

The idea for Suitsat was first conceived by the ARISS-Russia team, led by Sergey Samburov, RV3DR, and was extensively discussed at the joint AMSAT Symposium/ARISS International Partner meeting in October 2004. The project, also called Radioskaf or Radio Sputnik in Russia, is being led by project manager A. P. Alexandrov and Deputy Project Manager A. Poleshuk from RSC Energia, located in Korolev (Moscow area) Russia. On the US side, the hardware project development was led by AMSAT member Lou McFadin, W5DID.

Since October 2004 the Suitsat design concept matured and evolved due to the challenging development time constraints. In a very short timeframe, the ARISS international team designed built and tested a simple, yet fully featured system that we hope will inspire hams and students around the world.

The SSTV system will be installed inside the Service module as an integral part of the ARISS ham radio system. It will transmit and receive (JPG) still images from the International Space Station in a format called Slow Scan TV (SSTV). When fully operational, the SSTV system is capable of

sending up to 480 images per day from ISS. It will also be able to receive images from amateur radio stations on Earth. This system will utilize the already installed Kenwood D-700 radio and the ARISS antennas mounted on the Service Module. The SSTV equipment flown on Progress 19P includes the SpaceCam software, a radio/computer interface module, and data cables. The dedicated laptop for SSTV operations will be launched on a subsequent Progress vehicle.

Over the course of the past several months, the Suitsat and SSTV system passed the stringent NASA and Energia safety certification process and were deemed ready for flight--clearing the way for the incorporation into the Progress 19P vehicle. More information on SSTV and Suitsat will be provided as we get closer to installation and deployment .

On behalf of the ARISS International team, I want to congratulate the Suitsat hardware development team and the SSTV development team on a job well done. We look forward to future operation of these systems on ISS, inspiring the next generation of space explorers.

ARISS is an international educational outreach program partnering the ISS space agency partners--NASA, RSA, ESA, JAXA, and CSA, with volunteers from the AMSAT and IARU (International Amateur Radio Union) organizations from participating countries. ARISS offers an inspirational opportunity for students to experience the excitement of Amateur Radio by talking directly with crewmembers on-board the International Space Station. Teachers, parents and communities see, first hand, how Amateur Radio and crewmembers on ISS can energize youngsters' interest in science, mathematics, technology, and learning. Further information on the ARISS program is available on the website http://www.rac.ca/ariss

[ANS thanks Frank, KA3HDO for the above information]

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SB SAT @ AMSAT $ANS-261.05
PCSAT2 Enabled for 1200 and 9600 Baud Digipeating Operation

AMSAT News Service Bulletin 261.05
From AMSAT HQ SILVER SPRING, MD.
September 18, 2005
To All RADIO AMATEURS
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The PCSAT2 packet system is enabled for both 1200 and 9600 baud digipeating, and it can also do cross-BAUD digipeating. That is 1200 up and 9600 down or 9600 up and 1200 down. We had no specific application in mind, but it is there for experimentation.

For 1200 or 9600 use the path VIA ARISS. For cross-BAUD operation use the path VIA XBAUD.

The easiest way to experiment is to use either the Kantronics KPC-9612+ TNC or the Kenwood D7 or D700 that can both easily switch between 1200 and 9600 baud.

Experiment with the shortest TXD delay you can get by with at 9600 baud. Typically for one-at-a-time packets like APRS, there is not much advantage for operating at 9600 baud, because the TXD delay is often as long or longer than the data, so the actual throughput advantage of 9600 is more like a factor of 2 than 8.

Perhaps the value of operating at 9600 baud would be in downloading Mail from the PCSAT2 PBBS. That is the only time when all the delays will be

amortized and 9600 baud would give you a significant throughput advantage.

Users are welcome to use the PCSAT2 digipeater for experimentation.
   Uplink is 145.825
   Downlink 435.275 +/- 10 KHz Doppler
   DIGIpeater call is ARISS for 1200 or 9600
   DIGIpeater call is XBAUD for cross-baud
   PBBS callsign is MAIL-1

The Kenwood D7 and D700 can do either 1200 or 9600 and on either band, but not both baud rates at the same time. The KPC-9612+ can transmit either 1200 or 9600, but because it is dual port, it can receive both at the same time.

[ANS thanks Bob, WB4APR, and the US Naval Academy Satellite Lab for the above information]

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SB SAT @ AMSAT $ANS-261.06
IGATE Manual Available On-line

AMSAT News Service Bulletin 261.06
From AMSAT HQ SILVER SPRING, MD.
September 18, 2005
To All RADIO AMATEURS
BID: $ANS-261.06

Cor, PD0RKC, has created an easy manual to make your APRS station also function as an IGATE station. When APRS stations send their beacons on the air, including via ISS and PCSAT2, the IGATE station receives the beacons and fowards them to the internet.

APRS packets, containing position coordinates or messages, received via the ISS and forwarded via IGATE stations can be viewed at:
http://www.findu.com/cgi-bin/ariss/index.cgi

The easy IGATE manual for UIVIEW can be found on-line at:
http://pd0rkc.mine.nu (click on the ISS button).

In case you can not visit Cor's website you can send him an e-mail so he can send you his IGATE information via e-mail:
isszarya (at) hotmail.com

[ANS thanks Cor, PD0RKC for the above information]

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SB SAT @ AMSAT $ANS-261.07
ARISS Status for the week of September 12, 2005

AMSAT News Service Bulletin 261.07
From AMSAT HQ SILVER SPRING, MD.
September 18, 2005
To All RADIO AMATEURS
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1. Japan Red Cross Contact Successful

The Japan Red Cross Radio Volunteer Corps of Fukui-prefecture, Wakasa Branch, in Obama-City, Fukui-ken, Japan had a successful ARISS contact with the ISS. The Radio Corps provides training on

how to communicate via amateur radio during an emergency, and
the students are also involved with the Wakasa branch of the
Young Astronauts Club-Japan (YAC-J), which is lead by Japanese
astronaut Mamoru Mouri. On September 8, astronaut John Phillips,
KE5DRY, answered 15 questions posed to him by the thirteen students.
Approximately 110 people gathered to observe the contact, including
four newspapers, and four television stations. The audio, video,
photos, and three newspaper articles covering the event may be
found on ARISS member, Satoshi Yasuda's website.
See: http://jk1zrw.dyndns.org/ -Select "Successful School in
Region 3", and then "The Japan Red Cross Corps" contact.

2. Upcoming School Contacts

Students from Sanderson High School in Sanderson, Texas will speak
to John Phillips on Thursday, September 22 at 16:08 UTC.

3. AMSAT and ARISS Joint Meetings, 2006

ARISS plans to hold its international face to face meeting immediately
following the 2006 AMSAT-NA Symposium which will be held in the San
Francisco Bay area. Details for the joint meetings will be announced
later this month.

4. PCSAT2 Mode Change

PCSAT2, which operated in PSK-31 mode for the last few weeks, has been
changed to UI/APRS Packet digipeater mode.
See: http://www.ew.usna.edu/~bruninga/pec/pc2ops.html

[ANS thanks Carol, KB3LKI for the above information]

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SB SAT @ AMSAT $ANS-261.08
SSETI Launch Information Sheet Released

AMSAT News Service Bulletin 261.08
From AMSAT HQ SILVER SPRING, MD.
September 18, 2005
To All RADIO AMATEURS
BID: $ANS-261.08

The current status of the launch programme can be seen at
http://sseti.gte.tuwien.ac.at/WSW4/MOPWS/news.php

The latest version of the LEOPS information sheet is appended below.
Its primary audience is "non amateur" so please do not be upset by
some of the basic information and advice that it contains!

SSETI Express LEOPS (Launch & Early Operations) Info

These are the preliminary TLEs for SSETI Express based upon a launch at
06:52:26 UTC on September 27, 2005.

They will probably be updated just before launch and will certainly only
work for a couple of days after launch. By then we should have received
updates from NORAD and can then start to identify which orbit data refers
to which satellite.

For the first few orbits they will also be valid for the cubesats and all
the other payloads on the same launch. These are detailed below.

```
SSETI1
1 288XXU 0503XC   05270.28641000 -.00000001  00000-0  10000-4 0    12
2 288XX  98.1900 167.4100 0001920   0.0000  50.5000 14.60850000 00013
```

This data can be entered into any of the normal "tracking/prediction" programmes for display at launch events.

SSETI Express UHF transmitter will be activated approximately 100 minutes after launch. The details below give some information about what we expect to hear and when for Express and the cubesats.

To receive the UHF transmissions from Express and the cubesats there are two possibilities.

The simple possibility is a handheld receiver and simple hand held TV type yagi antenna which is pointed in the general expected direction. When Express is heard then this will only be obvious by a sudden burst of increased noise from the loudspeaker. - the 9k6 data sounds just like noise to the human ear! This will not be very impressive to invited guests but will make the Express teams themselves very happy. Remember to have three frequencies stored in the radio 437.260 MHz at AOS, 437.250 MHz for when the satellite is at its nearest point to you and 437.240 MHz as it moves away from you. This is Mr. Doppler at work.

The more complicated possibility is to use a "proper" receiving station with automatically steered circularly polarised antennas, a mast head preamp, Doppler adjusted UHF radio with a widened IF to pass the 9k6 data and a suitable TNC feeding a computer and display. With this set-up it should be possible to display the decoded telemetry from the satellite.

There is already a satellite in a very similar orbit using similar frequencies and modulation method to Express. This is called AO51 (Amsat Oscar 51) also known on some databases as Echo. It is strongly recommended that you use the signals from this satellite to test your receive system (simple or complicated options) so you have already had experience before the launch day and demonstration. AO51 has a variety of scheduled activity modes and frequencies and these can be checked here:
http://www.amsat.org/amsat-new/echo/ControlTeam.php
Most times it is radiating a voice signal and a 9k6 data signal simultaneously.

SSETI Express

Downlink: 437.250 MHz AX25 9k6 FSK
(also 2401.835 MHz 38k4 data and voice - but not for initial operations)

The first transmission will occur approximately 65 min after separation from the launch adaptor- approx 100 mins after launch - we now expect this now to occur around 08:32 UTC when Express is over northern Europe.

The type of the first transmissions will depend on the state of the battery.

In Nominal mode - a sub 1 second burst of AX25 telemetry every 18 seconds.

In Recovery or Safe mode - simple on/off telemetry comprising 16 x 100msec carrier pulses. This telemetry is repeated every 30 seconds in Safe Mode and every 2 mins when in Recovery Mode.

The satellite will transmit at a power of 3 watts.

The next time that Express can be heard over Europe will be the pass that starts in Aalborg at around 10:03 UTC. This pass gives good coverage of all of Europe and should also be audible from the launch site.

Reception reports will be welcome by email at operations@sseti.net or by
placing them on the SSETI Newsgroup at slave.gte.tuwein.ac.at in the folder
"sseti.express.report" where you will also be able to see reports from other
locations around the world.

Full information on receiving SSETI Express signals, decoding the telemetry,
submitting it to the project team and entering the competition will be
posted at: http://sseti.gte.tuwien.ac.at/WSW4/MOPWS/news.php.
This will have links to all the updated pages as they occur.

NCUBE2: a cubesat which will be released by Express

Downlink: 437.305 MHz
Bitrate: 9600b/s
Modulation technique: GMSK

The first transmission will occur 20 min after separation from Express -
approx 120 mins after launch.

The message: "DE=LA1CUB=NCUBE2=FF=LA1CUB===" is morsed using a 2400Hz tone,
26 words per minute where FF is a hex number [00=3,0V - FF=4,5V]
        If battery voltage is above 3,8V, every 2 minutes
        If battery voltage is below 3,8, every 5 minutes

At the end of the message an unnumbered AX.25 packet is attached containing
the string:

DE=LA1CUB=NCUBE2=NORWEGIAN CUBESAT - WWW.NCUBE.NO
In the header of the AX.25: Callsign: NCUBE Destination: EARTH
The satellite will transmit at a power of 1.5 W at full battery charge
Reception reports will be welcome email to ncube@rocketrange.no or by
phone +47 76 14 44 00

UWE-1: a cubesat which will be released by Express

Downlink 437.505 MHz. 9k6 FSK AX25 packet
The first transmission will occur 6 min after separation from Express
approximately 106 minutes after launch.
The satellite will transmit for about 1 sec every 1 minute. The output
power of the transceiver is approximately 1 watt.
Further details will be made available later.

Reception reports will be very welcome at
cubesat@informatik.uni-wuerzburg.de.

CUBESAT Xi-V: a cubesat which will be released by Express

CW signal on 437.465 MHz
FM packet of AFSK AX.25 on 437.345 MHz
The first CW transmission will occur 30 minutes after separation from
Express approximately 130 minutes after launch.
FM packet will not be transmitted unless commanded by the ground station.
The interval of the CW signal is about 30 seconds.
The output of CW signal is 80 mW, and that of FM packet is 800 mW.
Both signals share one dipole antenna, so the satellite cannot transmit
both signals at the same time.
The email address to receive reports will be announced at the ground
station web page http://gs.space.t.u-tokyo.ac.jp/ before launch.

SAFIR-S

A module integrated within the RUBIN experimental payload which will stay attached to the launch adaptor.
A frequency of 2401.900 MHz is used. Callsign DP1AIS
One transmission cycle consists of 15 sec. FM-voice beacon transmission and short 9k6 G3RUH data packets every 15 seconds. Total duration of the above described transmission cycle is about 2-3 minutes.
Reports can be sent to DG6BCE@aatis.de

MOZHAETS

There is also a satellite in the Mozhaets series included in this launch but no details of its transmissions are known.

LAUNCH DAY BROADCASTS

SATELLITE

The launch will be broadcast via ESA Television on Astra 1 G at 19.2 degrees east:

Transponder:	1.108
Reception frequency:	12551.50 MHz
Polarization:	Vertical
Symbolrate:	22Msymb/s
FEC:	5/6
TS_ID:	1108
ON_ID:	1
Service Name:	ESA
Service provider:	ASTRA
Service_ID:	12140
TXT:	none

This is always on and will transmit an ESA logo starting three days before the launch. The programme is expected to run for approximately 30 minutes and will include the launch sequence live from the Plesetsk launch site. To set up a new installation for use to receive the Astra 1G signals would need this sort of equipment:

A small dish (~50cm) with the correct LNB - (in the UK a "Sky dish and LNB" would be fine) - with either a FTA (free to air) set-top decoder feeding a normal TV or a DVB satellite box plugged into the back of a computer (either via a USB port or on a PCI card)

Also required is a clear view from the dish to the satellite and, of course, some coax cable to connect the two!

INTERNET

The ESA launch programme on ASTRA 1G will also be available as a webstream on the Internet. Details have recently changed and will be updated as soon as possible.

SSETI EXPRESS HANDBOOK

To coincide with the launch the SSETI Express Handbook has just been published. Written by Richard Limebear G3RWL, using ESA and AMSAT-UK documentation, the 22 page handbook covers just about every aspect of this exciting new spacecraft. It details AMSAT-UK's involvement in the project and contains a wealth of technical information about the spacecraft and the three Picosats that will be launched from it.

The PDF of the handbook can be downloaded free of charge from the AMSAT-UK website at http://www.uk.amsat.org/ or printed copies are available for £5 inc P&P in Europe from AMSAT-UK, "Badgers", Letton Close, Blandford, Dorset,

DT11 7SS, United Kingdom. Tel: +44 (0)1258 453959 Email: g3wgm@amsat.org.
Cheques should be made payable to "AMSAT-UK". Postage rates for other parts
of the world available on request.

A French version of the handbook translated by Christophe Candebat F1MOJ is
also available at the AMSAT-UK web site.

[ANS thanks Graham, UA/G3VZV, and Trevor, M5AKA for the above information]

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SB SAT @ AMSAT $ANS-261.09
SatPC32 V12.4 Tracking Program DDESat32 Download Available

AMSAT News Service Bulletin 261.09
From AMSAT HQ SILVER SPRING, MD.
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To All RADIO AMATEURS
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The new SatPC32 12.4 and Wisat32 12.4 work with the Wisp32 programs
without any problem. Users of the tool DDESat32 who have updated to
SatPC32 12.4 also need to update DDESat32 because DDESat32 is using some
of the auxiliary files and rotor drivers of SatPC32. The DDESat32
update can be downloaded from my website (for free). DDESat32 is a tool
that is particularly designed to be used with Wisp32. It is not part of
the SatPC32 package and it comes with its own setup program.

Here is the link to download DDESat32:
http://www.dk1tb.de/ddesatsetup_124.zip

DK1TB has generously donated SatPC32 to AMSAT-NA, AMSAT-UK, and
AMSAT-DL. If you use SatPC32, please purchase a registration code
from one of these groups. All of the purchase price will go to
support amateur satellite programs.

[ANS thanks Erich, DK1TB for the above information]

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SB SAT @ AMSAT $ANS-261.10
AMSAT Awards This Week

AMSAT News Service Bulletin 261.10
From AMSAT HQ SILVER SPRING, MD.
September 18, 2005
To All RADIO AMATEURS
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Bruce Paige, KK5DO, AMSAT Director Contests and Awards, reports this week
congratulations go out to all of the following.

* Roger Banks, KE5AQD, Satellite Communicators Club

* Andre Theelen, PH7AT, 51 on 51 Award #34

To see all the awards visit http://www.amsat.org

[ANS thanks Bruce, KK5DO for the above information]

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SB SAT @ AMSAT $ANS-261.11
New Release of InstantTune Version 1.50

AMSAT News Service Bulletin 261.11
From AMSAT HQ SILVER SPRING, MD.
September 18, 2005
To All RADIO AMATEURS
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Tony, AA2TX, announced a new release of InstantTune which provides automatic radio tuning for use with InstantTrack. He said, "Since it is pretty old (at least for software,) I was not planning on producing anymore "official" releases of this package. However, I have added a few new features based on user requests and decided to offer them to everyone who wants them as a patch release."

The new features are as follows:

1. Velocity Interpolation
InstantTune will estimate a satellite's velocity between actual velocity updates from InstantTrack. This allows it to tune the radios 4x faster than it did before. The doppler shift is noticeable on 70cm downlinks but it really flies on the AO-51 (Echo) S-band downlink.

2. PL control
InstantTune can turn on the PL (CTCSS) encoder and set the tone frequency for the satellites that require it.

3. Hot Keys
From any InstantTrack screen, you can hit CTRL-B to tune the radio to the beacon. You can then hit CTRL-Q to return to the previously tuned QSO frequency. This allows you to quickly check the beacon and then go back to your QSO.

4. Improved FT-817 driver
The FT-817 driver worked fine when used as a receiver or transmitter but when used as a single-radio satellite station, the operation was a bit eratic. The new driver significantly improves this operation and I was easily able to make a VO-52 SSB contact using just an FT-817 feeding a pair of tripod mounted full wave loop antennas (a pretty minimal portable, QRP satellite station.)

5. FT857, FT897 support
These radios use the same driver as the FT-817 but you had to know to type in "ft817" in the config file. InstantTune will now recognize "ft857" and "ft897" as valid radio types.

The patch release also includes a new "itune.exe" control program with a few minor improvements not worth mentioning - just type "itune" at the DOS prompt and it will list all the commands. The new version, InstantTune Version 1.50, will work with Versions 1.50 or 1.55 of InstantTrack.

If you would like a copy of the patch release with these new features, send Tony an email via aa2tx at amsat.org.

InstantTune continues to support all of the popular Yaesu, Kenwood, and ICOM radios as well as any "mic-button" controlled radios. But note that I don't have access to Kenwood or ICOM radios to test with so I did not put in the PL control feature for those radio drivers. If someone would like it added for one of those radios, I will be happy to implement it as long as they are willing to test it.

As always, InstantTune is truly open source and it is fine with me
if other developers use this source code to help develop new radio
tuning software. If you would like a copy of the latest source code
(mostly C++,) just send Tony an email.

[ANS thanks Tony, AA2TX for the above information]

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73,
This week's ANS Editor,
JoAnne Maenpaa, WB9JEJ
WB9JEJ at amsat dot org